

# Investing in Clean Energy

## The Challenges and Opportunities

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## Overview

- Renewable Energy
  - PNM Resources Leadership in Environmental Sustainability
  - New Mexico Renewable Portfolio Standard
  - Challenges and Opportunities Presented by Renewables
  - What the Industry Needs

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## PNM Resources

### New Mexico

- Largest provider of natural gas and electricity
  - 481,000 natural gas customers
  - 426,000 PNM electric customers
  - 49,500 Texas-New Mexico Power electric customers in southern NM
  - Ownership in 6 power plants
  - 78 wholesale customers



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## PNM Resources

### ➤ Texas

#### ➤ Serve in deregulated and regulated markets

##### ➤ Texas-New Mexico Power

➤ 210,000 T & D customers

##### ➤ First Choice Power

➤ Retail Electric Provider

➤ 84,000 customers

➤ 146,000 legacy "Price to Beat" customers

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## PNM Resources

### ➤ Ownership in three coal-fired plants

- San Juan Generating Station
- Four Corners Power Plant
- Twin Oaks Power Plant (TX)

### ➤ Own and operate four gas-fired plants

- Afton Generating Station
- Reeves Generating Station
- Luna Generating Station
- Lordsburg Generating Station

### ➤ Ownership in Nuclear Power

- Palo Verde Nuclear Generating Station Units 1, 2, 3 (AZ)

### ➤ Purchased Power

- NM Wind Energy Center
- Delta Station



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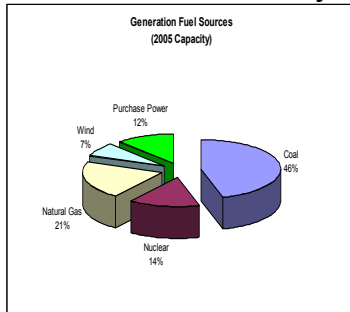
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## PNM's Portfolio Diversity

Generation Fuel Sources  
(2005 Capacity)



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## Renewables in New Mexico

### ➤ New Mexico Renewable Portfolio Standard

- Regulatory Action
  - Rule 572, December 2002
- Legislative Action
  - Renewable Energy Act of 2004

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## Renewables in New Mexico

### ➤ New Mexico Renewable Portfolio Standard

- Energy Requirement
  - 5% by 2006, 11% by 2011
  - PNM met in 2006, need additional resources by 2009
- Reasonable Cost Threshold
- Delivery in New Mexico

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## Opportunities from Investing in Clean Energy

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## Environmental Sustainability Path

### ➤ PNM Resources Board of Directors

- Adopted corporate sustainability policy in 2004
- Take environmental, social and economic impacts into consideration in every business decision
- Established 5-year goals
  - Become national leader in renewable energy
  - Use 15 to 20% less water per MWh than 2002 level
  - Reduce waste streams by 20%
  - Emit 15% less sulfur dioxide, 15% less nitrogen oxide, 7.5% less particulates per MWh than 2002 levels and 7% less carbon dioxide per MWh than 2003 levels
  - Considering new goal on energy efficiency

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## NM Wind Energy Center



- PNM signed wind agreement in fall 2002 prior to RPS
- 204 megawatt plant near House, New Mexico
- Owned and operated by FPL Energy
- 4<sup>th</sup> largest in the U.S.
- All power purchased by PNM
- Among largest in world
- More than 10,000 customers support Sky Blue program

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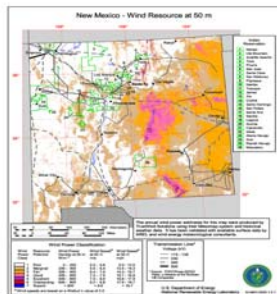
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## New Mexico's Wind Potential



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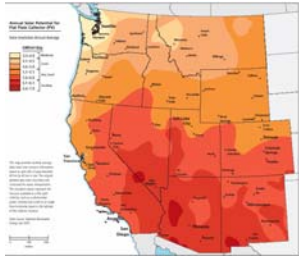
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## Solar Potential in the West



Source: Western Resource Advisory

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## The Challenges of Investing in Clean Energy

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### Some Challenges

- Current & future costs
- Cost recovery
- Reliable/dispatchable resources
- Available incentives
- Access to transmission
- Integration into existing system
- State preference

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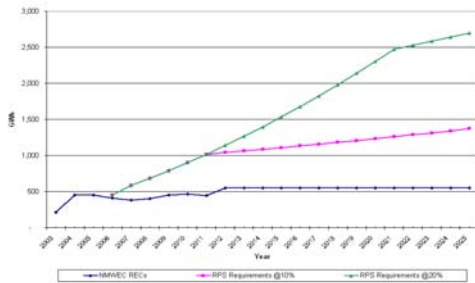
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## PNM Renewable Status

PNM's RPS Requirements



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## Renewables in New Mexico

- **Reasonable Cost Threshold**
  - Unique requirement
  - Established two-pronged approach
    - Rate Impact Ceiling
      - 1% of average customer rate in 2006, increases by .2% annually until reaching 2% in 2011
    - Technology Cap
      - Set in 2004
      - Individual resource limits set for wind, hydro, biomass, geothermal, solar greater than 10kW

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## Comparative Costs of Generation

Generation	Cents per kWh
Coal	4.2
Gas	5.0
Wind	5.0
Geothermal	5.8
Biomass	6.2
Solar, thermal	18.0
Solar, PV rooftop	40.0

Source: EPRI, June 2006

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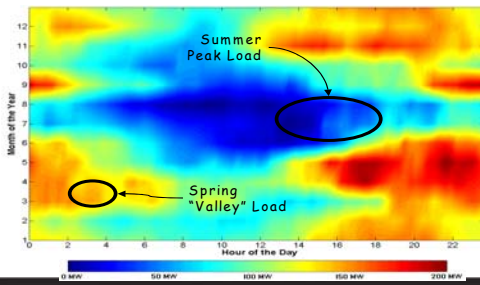
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## Managing Wind Energy



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## Additional Renewables at PNM



### In 2006 PNM:

- Offered incentives for customer-owned solar photovoltaic systems
- Issued RFP for additional renewable resources
- Has entered into a PPA for a 32 MW biomass facility for the 2008/2009 timeframe and is considering adding concentrated solar power
- Added 25 kW solar photovoltaic generation
- Continued purchase of all energy from NM Wind Energy Center

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## Energy Efficiency and Demand-Side Management (DSM)

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## Energy Efficiency and DSM Milestones

PNM gas efficiency programs launched Feb of 2006

- Additional gas programs to be filed with PRC by year end 2006
- First suite of electric energy efficiency programs to be filed by January 31, 2007 for both residential and commercial customers
- Target approval by PRC and available to customers mid 2007

PNM issued a DSM RFP in May of 2006

- PNM working with two winning responders on contract issues
- Projects will be including in Jan 31, 2007 PRC filing
- Programs designed to reduce electric peak demand through controlling various customer loads like air-conditioning

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## The Future of Renewables

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## Future of Renewables in NM

- Future Renewable Portfolio Standard Activity
  - Reconsideration of reasonable cost thresholds
  - Possible 15% to 20% RPS requirement to be introduced in the 2007 New Mexico legislative session
  - Potential for federal RPS

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### Future of Renewables at PNM

- Future Resources
  - Renewables are just part of the picture
  - Cost recovery and technology development is still key
  - Diversity still critical for cost, reliability and security
  - Demand side management/energy efficiency must be considered a valuable resource

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### Future of Renewables Nationally

- Climate change and other environmental regulatory/policy will drive demand for renewables
  - Renewables are expensive
    - Cost recovery is essential
    - Technology development needs to continue
  - What the industry needs
    - Private/public sector collaboration
    - Renewable energy credits
    - Policies that encourage long-term planning and investment
    - Innovative renewable portfolio standards
    - Policies that reflect how energy markets operate

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